



# PHYSICS

## BOOKS - X BOARDS

### SAMPLE QUESTION PAPER

#### Section A

1. Will current flow more easily through a thick wire or a thin wire of the same material when connected to the same source ? Why ?



**Watch Video Solution**

2. Explain the role of any three abiotic factors affecting the environment.



**Watch Video Solution**

3. Why is the folding up of the leaves of a sensitive plant on touching with a finger not a tropism?



**Watch Video Solution**

4. How does the electronic configuration of an atom relate to its position in the Modern Periodic Table?



**Watch Video Solution**

5. State two advantages of parallel circuit over the series circuit.



**Watch Video Solution**

6. Acetic acid when dissolved in water, it does not dissociate completely. Why ?



**View Text Solution**

7. Name a common nutrient that is absorbed in the small intestine and reabsorbed by the kidney tubules.



**Watch Video Solution**

8. State modern periodic law of classification of elements.



**Watch Video Solution**

9. Mention any one reason due to which most of the thermal power plants are set up near coal or oil fields.



**Watch Video Solution**

**10.** Write the relation between electric power of a devices with potential difference across its two ends and its resistance .



**Watch Video Solution**

**11.** The acid present in the tomatoes is

A. Acetic acid

B. Citric acid

C. Tartaric acid

D. Oxalic acid

**Answer: D**

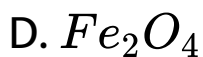
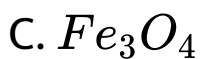


**Watch Video Solution**

**12.** Which of the following oxide(s) of iron would be obtained on prolonged reaction of iron with steam?

A. FeO

B.  $Fe_2O_3$



**Answer: C**



**Watch Video Solution**

**13.** Pick out the chemically most reactive elements from the given triads.

Li,Na,K and F,Cl,Br

A. Li & F



B. Na and Cl

C. K and Br

D. K and F

**Answer: D**



**View Text Solution**

**14.** Which plant hormone promotes cell division?

A. Auxin

B. Gibberellin

C. Cytokinin

D. Abscissic Acid

**Answer: C**



**Watch Video Solution**

**15.** The theory of evolution of species by natural selection was given by

A. Mendel

B. Darwin

C. Lamarck

D. Weismann

**Answer: B**



**Watch Video Solution**

**16.** Name the spherical mirror which can produce a virtual and diminished image of an object.

A. Convex mirror

B. Concave mirror

C. Plane mirror

D. Both concave and convex mirror

**Answer: A**



**Watch Video Solution**

**17.** The defect of vision in which the image of nearby object is formed behind the retina is 1

A. Myopia

B. Hypermetropia

C. Presbyopia

D. Short-sightedness

**Answer: B**



**Watch Video Solution**

**18.** If the potential difference across the ends of a conductor is doubled, the current flowing through it gets

A. doubled

B. halved

C. four times

D. no change

**Answer: A**



**Watch Video Solution**

**19. Ocean thermal energy is due to :**

A. pressure difference at different level in the ocean

B. temperature difference at different levels in the ocean

C. Energy stored by the waves in the ocean

D. Tides rising out of the ocean

**Answer: B**



**Watch Video Solution**

**20.** Flow of energy in an ecosystem is always

- A. Unidirectional
- B. Bidirectional
- C. Multidirectional
- D. No specific direction

**Answer: A**



**Watch Video Solution**



21. Fill in the following blanks with suitable words :

A solar cell converts.....energy into.....energy.



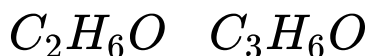
**Watch Video Solution**

22. Name the two components of central nervous system in humans.



**View Text Solution**

23. Select two homologous compounds from the following carbon compounds.



[View Text Solution](#)

24. Why a leaf must be destarched before starting the experiment showing that light is necessary for photosynthesis ?



[View Text Solution](#)

**25.** In the experiment to show that  $CO_2$  is given out during respiration, which chemical is taken in the small test tube two show the liberation of  $CO_2$  gas



**View Text Solution**

**26.** Name the physical quantities which are indicated by the direction of thumb and forefinger in the Fleming's right hand rule ?



**Watch Video Solution**

**27.** What is the function of ozone which is present in the upper level of the atmosphere?



**Watch Video Solution**

**28.** Mention the purpose of blacking the interior of a solar cooker.



**Watch Video Solution**

**29.** Potato chips manufactures fill the packet of chips with nitrogen gas. Why ?

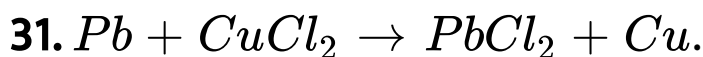


**View Text Solution**

**30.** Define principal axis of a spherical mirror.



**Watch Video Solution**



the above reaction is an example of

- A. combination reaction
- B. double displacement reaction
- C. decomposition reaction
- D. displacement reaction

**Answer: d**



**View Text Solution**

**32. Example of an amphoteric oxide is**

A.  $Na_2O$

B.  $MgO$

C.  $Al_2O_3$

D.  $CaO$

**Answer: C**



**View Text Solution**

**33.** An element 'X' has mass number 40 and contains 21 neutrons in its atom. To which group of the periodic table does it belong.

A. group1

B. group 2

C. group 17

D. group 13

**Answer: A**



**View Text Solution**

**34.** Posture and balance of the body is controlled by



A. pons

B. medulla

C. cerebellum

D. cerebrum

**Answer: C**



**View Text Solution**

**35.** Which of the following decides the sex of the child ?

A. Male gamete i.e. , sperm

B. female gamete i.e., ovum

C. Both sperm and ovume

D. mother

**Answer: A**



**View Text Solution**

**36.** Focal length of a concave mirror is

A. positive

B. negative

C. depends on the position of the objects

D. depends on the position of image

**Answer: B**



**Watch Video Solution**

**37.** In India, the electricity is supplied at

A. 220V,60Hz

B. 220V,50 Hz

C. 110V,60 Hz

D. 110V,50Hz

**Answer: B**



**Watch Video Solution**

**38.** Which of the following is the ultimate source of energy

A. water

B. fossil fuels

C. sun

D. uranium

**Answer: C**



**Watch Video Solution**

**39.** Acid rain is caused by the oxides of

A. Carbon

B. Nitrogen only

C. sulphur only

D. sulphur and nitrogen

**Answer: D**



**View Text Solution**

**40.** In which region has the ancient water harvesting structure 'Kulhs' been established ?

A. Rajasthan

B. Maharashtra

C. Bihar

D. Himachal pradesh

**Answer: D**



**View Text Solution**

## Section B

1. (a) State joule's Law of heating.
- (b) Name two devies where heating effect of current is utilised.
- (c) What is the name given to the commercial

unit of electrical energy ? Express this unit in joules.



**Watch Video Solution**

2. (a) Justify the following statements

(i) Tungsten is used exclusively for filament by electric lamps

(ii) We do not use series arrangement for domestic circuits.

(b) A wire of resistance  $8\Omega$  is bent in the form of a closed circle. What is the effective



resistance between two points A and B at the ends of any diameter of the circle ?



**Watch Video Solution**

**3.** What is the chemical formula of GYPSUM ?

Write chemical equation for its preparation.



**View Text Solution**

**4.** A coil of insulated copper wire is connected to a galvanometer. What will happen if a bar

magnet is : (a) Pushed into the coil. (b) Withdrawn from the coil. (c) held stationary near the coil. Draw diagram to represent each situation and explain the deflection in the galvanometer.



**View Text Solution**

5. Draw a circuit diagram of an electric circuit containing a cell, a key, an ammeter, a resistance of  $4\Omega$  in series with a combination of two resistors ( $8\Omega$ ) in parallel and a

voltmeter across the parallel combination. Each of them dissipate maximum energy and can withstand a maximum power of  $16W$  without melting. Find the maximum current that can flow through the three resistors.



**Watch Video Solution**

**6.** When electrolysis of water is done then :

(a) Identify the gases evolved at cathode and anode. (write equations also)

(b) Why is amount of gas collected in one of the other ? Name this gas .



**View Text Solution**

7. Ethanol is used on a large scale at commercial level. This is very useful chemical. It is commonly called alcohol and is the active ingredient of alcoholic drinks. But consumption of alcohol also causes drunkenness and this practice is socially condemned.

Read the text given and answer the following questions

(a) Give two chemical properties of ethanol

(b) As a responsible student of the class, what steps would you take to discourage the use of alcohol ?



**View Text Solution**

**8. (a) What is fertilization ?**

(b) Distinguish between internal and external fertilization.

(c) What is the site of fertilization in human beings ?



**View Text Solution**

## 9. Surgical Methods Of Birth Control



**Watch Video Solution**

10. An object is kept in front of a concave mirror of focal length 15 cm. The image formed is three times the size of the object. Calculate

the two possible distances of the object from the mirror.



**Watch Video Solution**

**11. (a)** State Snell's law of refraction of light.

(b) A transparent medium A floats on another transparent medium B. When a ray of light travels obliquely from A into B, the refracted ray bends away from the normal. Which of these two media A or B are optically denser and why ?



[Watch Video Solution](#)

## Section C

1. (a) What is an electric motor ? Write the principle on which its working is based .

(b) What is short circuit ? Give its possible cause.



[View Text Solution](#)



2. Mention three advantages and three disadvantage of producing hydroelectricity by building dams on rivers.

(b) given reason for the following

(i) A solar cooker box is covered with a glass plate

(ii) A solar cooker box is painted black from inside



**View Text Solution**

3. (a) Write the name and symbol of group 17 element belonging to second period.

(b) Write electronic configuration of K(19) . To which group of periodic table does it belongs ?

(c) What are substitution reactions ? Give one example

(d) What happens when acetic acid reacts with sodium bicarbonate ? Give the chemical reaction involved.

(e) Why does carbon form covalent bonds ?



**View Text Solution**

4. (a) write the name and molecular formula of an organic compound having its name suffixed with -ol and having two carbon atoms in the molecule. With the help of a balanced chemical equation indicate what happens when it is heated with excess of conc.  $H_2SO_4$  ?

(b) What is substitution reaction ? Give an example



**View Text Solution**

5. What do you mean by linear magnification produced by mirrors ? The power of a lens is  $+2.5\text{ D}$  . What kind of lens is it and what is its focal length ? Draw a ray diagram of an image when an object is placed on the principal axis of a convex lens between focus and optical centre.



**View Text Solution**

6. State Ohm's law. How can it be verified experimentally ? Explain with the help of a circuit diagram. Express the result graphically.



**Watch Video Solution**

7. (a) Name the gas which is liberated when an acid reacts with a metal ? How will you test the presence of this gas ?

(b) Write the chemical equation for the reaction of zinc metal with (i) Hydrochloric

acid and (ii) With sodium hydroxide. Write the chemical name of salt obtained in each case.

(c) Identify the acid and base for ammonium chloride salt. What would be the nature of this salt ? mention the pH range of this salt.



**View Text Solution**

8. (a) Draw a sectional view of the human heart and label on it, pulmonary artery, Right auricle, vena cava, pulmonary vein

(b) Explain why ventricles have thick muscular walls than the atria. ?



**View Text Solution**

9. A person cannot see distinctly the book placed nearer than 60 cm from his eyes.

(i) Name the defect of vision the person is suffering from.

(ii) List two possible causes of this defect.

(iii) Draw a ray diagram to show this vision defect.

(iv) How can this defect be corrected ?

(v) Draw a ray diagram to show the correction of this defect.



**View Text Solution**

**10.** (a) Name any three functional groups present in carbon compounds and write their formulae.

(b) Draw the structures of the following compounds indicating the functional group



present in each , propanal, propanone, propanoic acid, propanol



**View Text Solution**

**11. (a)** Name the part of a bisexual flower that produces male and female germ cells.

(b) Draw a longitudinal section of the female reproductive part of a flower showing germination of pollen grain.

Label -(i) Stigma, (ii) Pollen tube with germ cells, (iii) Female germ cells, (iv) style

(c) Name the part of flower that develops into  
a (i) seed and (ii) fruit



**View Text Solution**

**12.** When a moist slice of bread was kept in a cold and dark place for a couple of days, some organisms grew on it to form a fluffy cottony mass which later turned black. On seeing through a magnifying glass some thread like projections and thin filaments having bulb like structures at the tip were observed.

(a) Write the common name of the organism observed. name the mode of reproduction that made the organism grow and spreads over the bread.

(b) Draw the diagram of the organism observed and label its parts.

(c) Name and write anout the structure of the cells that arte responsible for its reproduction.



**View Text Solution**

## Section B

1. Given are three resistance of 3 ohms each. How can they give a total resistance of 9,1 and 2.0 ohm ? Draw suitable diagram for each case.



**Watch Video Solution**

2. The resistivity of three metals namely iron, silver and mercury are  $10 \times 10^{-8} \Omega m$ ,  $1.6 \times 10^{-8} \Omega$  and  $94 \times 10^{-8} \Omega$  m respectively. Answer the following using given data

(a) Which among iron, silver and mercury is

the best conductor ?

(b) If the length of the iron conductor is doubled, what will happen to its resistivity ?

Given reason for your answers.



**Watch Video Solution**

**3.** A student has set up a solar cooker in a box using a black painted aluminium sheet, a black cooking vessel, some glass wool, a transparent glass sheet and a mirror plate. What is the role of black paint, transparent

glass sheet and a mirror used in the solar cooker ?



**Watch Video Solution**

4. 2g of lead nitrate powder is taken in a boiling tube. The boiling tube is heated over a flame. Now answer the following

(a) State the colour of the fumes evolved and the residue left.

(b) Name the type of chemical reaction that

takes place stating its balanced chemical equation.



**View Text Solution**

5. What is biomass ? Name the reaction that takes place in a biogas plant. Write the main constituents of biogas. List two reasons for considering biogas an ideal fuel for domestic use.



**View Text Solution**

6. Name three different glands associated with the digestive system in humans. Also name their secretions.



**View Text Solution**

7. A convex mirror used for rear view on an automobile has a radius of curvature of 3.00 m. If a bus is located at 5.00 m from this mirror, find the position, nature and magnification of the image.



**Watch Video Solution**



8. What is a wind mill ? Write two advantage and two limitations of using wind mills to generate electricity.



**Watch Video Solution**

9. The electronic configuration of an element 'X' is 2,8,8,2. Write its (i) group number, (ii) period number and (iii) the number of valence

electrons in its atom. Justify your answer in each case.



**View Text Solution**

**10.** An element 'X' has atomic number 6. Another element 'Y' has 17 electrons in its neutral atom.

(a) To which group of modern periodic table to 'X' and 'Y' belong ?

(b) What type of bond will be found in the compound. When 'X' and 'Y' combine ?

(c) Write the formula of this compound.

State reason for your answer in each case.



**View Text Solution**

11. Mendel crossed a tall pea plant producing round seeds and a short pea plant producing wrinkled seeds. Write the plant type of  $F_1$  and  $F_2$  progenies he got and the conclusion he had drawn from such a cross



**View Text Solution**

